

REMARKS

Interview Summary

During the May 13, 2009 interview, Applicant and attorney for Applicant discussed with Examiner Moore various issues relating to the Office Action of February 2, 2009, including all pending claims and the two cited references, U.S. Patent No. 5,258,480 and U.S. Patent No. 5,650,453, both to Eckberg et al. Agreement was reached with respect to the claims. As discussed during the interview, and for the reasons presented below, the present claims - and currently amended claims 1, 12 and 15, and their dependent claims - are allowable over the prior art of record. The below summary constitutes the complete written statement required by 37 C.F.R. § 1.133 and complies with MPEP § 713.04.

During the interview, the advantages of the present invention were discussed with the Examiner. The invention has distinct advantages in the electronics field. Particularly, as discussed during this interview, a potential customer of the assignee of the pending application promulgated an outgassing standard for label stock of no more than 20 micrograms per square centimeter total silicone extractables. The present invention met and exceeded this standard. As stated in the original application at page 3, lines 6-7, and as elaborated upon by the inventor Mr. Thompson during the interview, the present invention has the effect of “minimizing or eliminating silicone migration in microelectronic applications.”

Rejection of the Claims in Office Action of February 2, 2009

Rejection over the ‘480 Patent

In response to a prior Office Action dated June 12, 2008, Applicants submitted the December 11, 2008, Declaration of Danny Charles Thompson (hereinafter “the Thompson Declaration”). Mr. Thompson is one of the three co-inventors of the invention described in the present application. The Thompson Declaration described testing done to determine the characteristics of compositions made in accordance with the prior art cited by the Examiner, and the corresponding characteristics of the claimed composition. A chart at page 3 of the Thompson Declaration provided a comparison of those characteristics for those prior art compositions (i.e., those identified in the chart as the “Eckberg ‘480 patent” and the “Eckberg ‘453 patent”) vs. the corresponding characteristics of the Applicant’s claimed composition (identified in the chart as “Loparex LO-EX”).

In the view of the Applicants, only the claimed composition provided the performance characteristics of the present claims.

After reviewing the Thompson Declaration, the Examiner issued the current Office Action of February 2, 2009 (hereinafter "the Office Action"), and maintained her rejection of the pending claims. In the Office Action, the Examiner raised certain issues relating to the Thompson Declaration, and to the pending claims. Many of those issues were discussed during the May 13 interview.

Referring first to page 3 of the Office Action, the Examiner's "biggest concern" was whether the composition used by the Applicants was representative of that described and claimed in the '480 patent. The Examiner noted that the '480 composition (as for example disclosed at col. 7, line 40, through col. 8, line 5) included a stripping step. The Examiner contended that the product selected for comparative testing (UV 9400) did not necessarily include a stripping step, and for this and other reasons may not have been representative of the '480 composition.

As discussed on May 13, 2009, a stripping step clearly appears to have been performed on the UV 9400. First, as may be seen in the '480 patent at col. 8, line 5, the composition of the '480 patent comprises 97.5% solids. This translates into a volatiles content of 2.5%. In contrast, as may be seen from its MSDS (attached as Exhibit A), the UV 9400 has a volatiles content of 1.0%. See Exhibit A, Page 4/7, middle of page, "Volatile Organic Content (vol): 1%(m)." Thus, the UV 9400 was implicitly subjected to a stripping step, as it has even less volatiles than the composition of the '480 patent.

In addition, the UV 9400 product is recognized by both Applicants and others in the field to be the product made in accordance with the '480 patent. This is evidenced by two patents discussed with the Examiner during the interview of May 13, 2009. The text of one of these two patents, U.S. Patent No. 6,057,033 to Bilodeau discloses at col. 6, lines 28-40 that: "the epoxypolyorganosiloxanes can be prepared by many methods known in the art...as for example described by...U.S. Pat. Nos....5,258,480...An example of a useful epoxypolyorganosiloxane that is commercially available is UV 9400 which is available from GE Silicones." A virtually identical disclosure appears at col. 8, lines 1-7 of U.S. Pat. No. 6,486,267, also to Bilodeau.

The Examiner's next position regarding the rejection over the '480 patent appears at the middle of page 3 of the Office Action. There, the Examiner contended that "col. 6, lines 19-21, teach that the reaction mixture is devolatilized to remove excess low molecular weight

siloxanes...one having ordinary skill in the art would have been motivated by the teachings in Eckberg et al. to remove as much of the volatile siloxanes as possible.”

The Applicants disagree with this contention. As noted above, the examples of the ‘480 patent of Eckberg et al. teach volatiles of relatively high levels, typically 2.5% or 25,000 ppm. Even the UV-9400 used by the Applicants in the comparative testing has 1.0% volatiles, or 10,000 ppm. See again Exhibit A, MSDS of UV-9400. Nothing in the references teach or suggest a composition having the total extractables of the claimed invention, i.e., no more than 10 ppm total volatile compounds, nor a means of attaining such low levels of total volatile compounds.

The Examiner’s third position with respect to the ‘480 patent appears in the last paragraph of page 3 of the Office Action. Essentially, the Examiner suggests that because one of the comparative examples of the Thompson Declaration has an extractable siloxane content of 1.91 micrograms per square centimeter, this renders obvious the presently claimed composition, having a siloxane content of about 1.5 micrograms per square centimeter.

The Applicants disagree. The comparative composition of the Thompson Declaration has a siloxane content that is over 25% greater than the claimed composition. But even more significantly, the present claims also call for total extractables of no more than 10 ppm. The cited comparative composition of the Thompson Declaration has 28.9 ppm total extractables—nearly *three times* the maximum amount required by the claims.

Hence, there is no basis for the Examiner’s contention that the comparative examples of the Thompson Declaration would be “expected...to have the same properties” of the claimed composition. For all of these reasons, the Examiner’s refusal to allow the claims over the ‘480 patent should be withdrawn.

Rejection over the ‘453 Patent

Many of the Examiner’s positions relating to the rejection of the claims over the ‘453 patent mirror those raised with respect to the ‘480 patent. To the extent that there are such similarities in the bases for the rejections, Applicants will not repeat their grounds for contending that neither the ‘453 patent nor the ‘480 patent anticipate or render obvious the claimed invention.

Regarding the non-unique issues relating to the ‘453 patent, Applicants respond as follows.

The Examiner questions the appropriateness of Polymer C of the '453 patent as a proper example for the comparison discussed in the Thompson Declaration. See middle paragraph at page 4 of the Office Action. As discussed on May 13, Polymer C is definitely a suitable comparative example. The fact that it is a close comparative example to the claimed composition can be found in the text of the '453 patent. Particularly, at column 10, lines 61-64 of the '453 patent, it is disclosed that Polymer C is the same product as taught in "Eckberg and Agars, U.S. Pat. No. 5,258,480." Thus, Polymer C is the appropriate '453 polymer for comparison to the product of the invention, just as the UV 9400 (made in accordance with the '480 patent) was an appropriate polymer for comparison to the product of the invention.

Regarding the Examiner's contention that Polymer C is "devolatized," this is of no significance in this case. First, Polymer C is again made in accordance with the teachings of the '480 patent. As noted above, the UV 9400 product also appears to be made in accordance with the '480 patent. Even after "devolatization", products made with the '480 patent have 25,000 parts per million of total extractables. The UV 9400 product, as noted above, has even less, i.e., 10,000 parts per million of total extractables. In contrast, products of the presently claimed invention have only about 10 ppm total extractables.

As the present composition has been compared to what is arguably the closest prior art of the '480 and '453 patents, Applicant has done all that is reasonably necessary. There is no requirement that an Applicant do a multiplicity of comparative tests on the prior art. An Applicant need not test all the compounds taught by each reference, so long as "*...the test (is) sufficient to permit a conclusion respecting the relative effectiveness of applicant's claimed compounds and the compounds of the closest prior art.*" *Id.* (quoting *In re Payne*, 606 F.2d 303, 316, 203 USPQ 245, 256 (CCPA 1979)) (emphasis in original). Here, given the close similarity of the composition of the prior art to the claimed composition, Applicants' comparative testing of the examples of the '480 and '453 patents should be deemed by the Examiner to be sufficient.

At the bottom of page 4 of the Office Action, the Examiner raised concerns regarding the potential variations in viscosity of the products used in the comparative tests. The Applicants used UV-9400 in their testing. The particular batch used by the Applicants had a reported Certificate of Analysis viscosity of 225 centistokes; the Examiner appeared to express concern at the difference between the viscosity of the UV-9400, and the viscosity of the Polymer C, which the Examiner contended was at 300 centistokes. .

The specifications for the viscosity of UV-9400 show a target viscosity of 250 centistokes, but with a range of 150-350 centistokes. Viscosity variation from one batch to another is not unusual, and it is sensitive to the molecular weight of the polymer. Solventless silicone polymers, based on their condensation polymerization, have broad molecular weight distribution, and accordingly, high viscosity variability. The range of 150 to 350 centistokes, as for UV-9400, is typical for such a polymer. Thus, it is not atypical to find viscosity of a particular product like UV-9400 varying, from batch to batch, between 225 to 300 centistokes.

Finally, the Examiner notes that certain of the prior art examples of the Thompson Declaration meet the requirements of Claims 12 and 15. These claims have been amended. As amended, the prior art examples do not meet the requirements of amended Claims 12 and 15.


Conclusion

In view of the foregoing, Applicants respectfully submit that all pending claims are allowable. Applicants respectfully request that the Examiner reconsider and withdraw the rejections of the pending claims, and enter an allowance of the same. Applicants further invite the Examiner to contact the undersigned attorney to discuss any matters pertaining to the present Application.

Respectfully submitted,

Dated: May 29, 2009

By: _____


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CERTIFICATE OF MAILING (37 C.F.R. § 1.8a)

I hereby certify that this correspondence is, on the date shown below, being deposited with the United States Postal Service, with first class postage prepaid, in an envelope addressed to: Mail Stop AMENDMENT, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on May 29, 2009.



Danielle Deuerling

CHI99 5120694-2.077128.0122



MOMENTIVE
performance materials

Material Safety Data Sheet

Version: 1.2
10/12/2007

UV9400 01P-Bottle (1.0 Lbs-0.454 Kg)
Paper release polymer

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufactured By: Waterford Plant
260 Hudson River Rd
Waterford NY 12188

Revised: 10/12/2007
Preparer: PRODUCT STEWARDSHIP COMPLIANCE AND STANDARDS
CHEMTREC 1-800-424-9300

Chemical Family/Use: Paper Release Product
Formula: Epoxysiloxane

HMIS

Flammability: 1 Reactivity: 0 Health: 0

NFPA

Flammability: 1 Reactivity: 0 Health: 0

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION! May cause skin, eye, and stomach irritation. Attention: Not for injection into humans. May generate formaldehyde at temperatures greater than 150 C (300 F). See Section 10 of MSDS for details.

Form: Liquid

Color: Translucent

Odor: Slight

POTENTIAL HEALTH EFFECTS

INGESTION

May cause stomach discomfort. Not an anticipated route of exposure.

SKIN

May cause mild skin irritation.

INHALATION

None known.

EYES

May cause mild eye irritation.

MEDICAL CONDITIONS AGGRAVATED

None known.

SUBCHRONIC (TARGET ORGAN)

None known.

CHRONIC EFFECTS / CARCINOGENICITY

This product or one of its ingredients present at 0.1% or more is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA.



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ROUTES OF EXPOSURE
Eyes; Dermal

3. COMPOSITION // INFORMATION ON INGREDIENTS

PRODUCT COMPOSITION	CAS REG NO.	WGT. %
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A. HAZARDOUS

B. NON-HAZARDOUS

Substituted siloxane	150678-61-8	> 90 %
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4. FIRST AID MEASURES

INGESTION

Do not induce vomiting. If victim is conscious, give 1-3 glasses of water to drink. Never give anything by mouth to an unconscious person. Get medical attention if irritation persists.

SKIN

Wash with soap and water. Get medical attention if irritation or symptoms from Section 3 develop.

INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration using a barrier device. If breathing is difficult give oxygen. Get medical attention.

EYES

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

NOTE TO PHYSICIAN

Treatment is symptomatic and supportive.

5. FIRE-FIGHTING MEASURES

FLASH POINT:

> 121 °C; 250 °F

SENSITIVITY TO MECHANICAL IMPACT:

No



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SENSITIVITY TO STATIC DISCHARGE

Sensitivity to static discharge is not expected.

EXTINGUISHING MEDIA

All standard extinguishing agents are suitable.

SPECIAL FIRE FIGHTING PROCEDURES

Firefighters must wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus with full face mask and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

Wipe, scrape or soak up in an inert material and put in a container for disposal. Wash walking surfaces with detergent and water to reduce slipping hazard. Wear proper protective equipment as specified in the protective equipment section.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Keep container closed when not in use. Avoid contact with skin and eyes.

STORAGE

Store away from heat, sources of ignition, and incompatibles. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

Eyewash stations; Showers; Ventilation and other forms of engineering controls are preferred for controlling exposures. Respiratory protection may be needed for non-routine or emergency situations.

RESPIRATORY PROTECTION

If exposure limits are exceeded or respiratory irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Supplied air respirators may be required for non-routine or emergency situations. Respiratory protection must be provided in accordance with OSHA regulations (see 29CFR 1910.134).

PROTECTIVE GLOVES

Rubber gloves



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EYE AND FACE PROTECTION

Safety glasses

OTHER PROTECTIVE EQUIPMENT

Wear suitable protective clothing and eye/face protection.

Exposure Guidelines

Component	CAS RN	Source	Value
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Absence of values indicates none found

PEL - OSHA Permissible Exposure Limit; TLV - ACGIH Threshold Limit Value; TWA - Time Weighted Average

OSHA revoked the Final Rule Limits of January 19, 1989 in response to the 11th Circuit Court of Appeals decision (AFL-CIO v. OSHA) effective June 30, 1993. See 29 CFR 1910.1000 (58 FR 35338).

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
ODOR:	Slight
COLOR:	Translucent
SPECIFIC GRAVITY (WATER=1):	0.99
VOLATILE ORGANIC CONTENT (VOL):	1 %(m)
VOC EXCL. H2O & EXEMPTS (G/L):	1.10

10. STABILITY AND REACTIVITY

STABILITY

Stable

HAZARDOUS POLYMERIZATION

Will not occur.

HAZARDOUS THERMAL DECOMPOSITION / COMBUSTION PRODUCTS

Carbon dioxide (CO₂); Carbon monoxide; Silicon dioxide.; Formaldehyde

INCOMPATIBILITY (MATERIALS TO AVOID)

None known.

CONDITIONS TO AVOID

None known.



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11. TOXICOLOGICAL INFORMATION

ACUTE ORAL

Remarks: Unknown

ACUTE DERMAL

Remarks: Unknown

ACUTE INHALATION

Remarks: Unknown

OTHER

None.

SENSITIZATION

No data available

SKIN IRRITATION

No data available

EYE IRRITATION

No data available

MUTAGENICITY

Unknown

OTHER EFFECTS OF OVEREXPOSURE

Attention: Not for injection into humans., This product contains methylpolysiloxanes which can generate formaldehyde at approximately 300 degrees Fahrenheit (150°C) and above, in atmospheres which contain oxygen. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant, and potential cancer hazard. A MSDS for formaldehyde is available from Momentive.

12. ECOLOGICAL INFORMATION

ECOTOXICITY

No data available

DISTRIBUTION

No data available

CHEMICAL FATE

No data available



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13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD

Disposal should be made in accordance with federal, state and local regulations., Incineration recommended in approved incinerator according to federal, state, and local regulations.

14. TRANSPORT INFORMATION

Further Information:

This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods.

15. REGULATORY INFORMATION

Inventories

TSCA list	y (Positive listing)
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	n (Negative listing)
Canada NDSL Inventory	n (Negative listing)
EU list of existing chemical substances	y (Positive listing)
Australia Inventory of Chemical Substances (AICS)	y (Positive listing)
Canada DSL Inventory	y (Positive listing)
Korea Existing Chemicals Inventory (KECI)	y (Positive listing)
China Inventory of Existing Chemical Substances	y (Positive listing)

For inventories that are marked as quantity restricted or special cases, please contact Momentive.

US Regulatory Information

SARA (313) CHEMICALS

Canadian Regulatory Information

WHMIS HAZARD CLASS
D2A VERY TOXIC MATERIALS



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Other

SCHDLE B/HTSUS:

3910.00.0000 Silicones in primary forms

ECCN:

EAR99

16. OTHER INFORMATION

OTHER

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate., C = ceiling limit NEGL = negligible EST = estimated NF = none found
NA = not applicable UNKN = unknown NE = none established REC = recommended ND = none determined V = recommended by vendor SKN = skin TS = trade secret R = recommended MST = mist NT = not tested STEL = short term exposure limit ppm = parts per million ppb = parts per billion By-product= reaction by-product, TSCA inventory status not required under 40 CFR part 720.30(h-2).